

CLAIMS

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1. A method of providing a recording of information on an object comprising the steps of:

3 P<sub>1</sub> predeterminately locating an object and a source of intense radiant energy with respect to each other wherein said radiant energy is generatable in the form of a pulsed radiant energy beam and whereby beam energy from said source may be caused to scan a selected area of the surface of said object defining at least one strip-like track portion of said object's surface,

P<sub>1</sub> scanning and detecting a selected portion of the object when said selected portion is predeterminately located with respect to said source of radiant energy, and

P<sub>1</sub> generating a control signal when such detection is made,

P<sub>1</sub> applying said control signal to cause the reproduction of selected information signals defining a code from a memory, and

P<sub>1</sub> utilizing said selected information signals while controlling relative movement between said beam and said object to pulse the radiant energy generated by said source and to cause pulses of said radiant energy so generated to effect radiation recording of indicia along space-separated areas of the surface stratum of the object defining a record track containing such indicia extending in the direction of relative movement between the object and the beam of said radiation directed thereat.

2. A method in accordance with Claim 1 in which a selected portion of the surface of said object is coated with a radiation sensitive material and said recording is effected within said coating of radiation sensitive material.

3. A method in accordance with claim 1 wherein said indicia recorded along space-separated areas above the surface of said object are recorded in the form of code recordings defining said information.

4. A method in accordance with claim 1 wherein said indicia recorded along said space-separated areas of said object are recorded in the form of digital codes.

5. A method in accordance with claim 1 wherein the radiation recording of said indicia is effected by providing variations in the topography of the surface stratum of said object.

6. A method in accordance with claim 5 wherein said variations in the topography of the surface stratum of said object are shaped by said radiant energy beam such that they are capable of being electro-optically reproduced.

7. A method in accordance with claim 1 wherein said object is a record member and said scanning is effected to record said indicia along space-separated record tracks of said record member.

8. A method in accordance with claim 1 wherein said scanning is controlled to provide said indicia along a plurality of parallel record tracks of said object.

9. A method in accordance with claim 1 wherein said object is a sheet of thin, elongated recording material of substantially constant thickness and width and said scanning is controlled to record said indicia along parallel record tracks of said recording material.

10. A method in accordance with claim 9 wherein said scanning is effected to record said indicia along record tracks of said sheet which extend parallel to the longitudinal borders of said record member.

coated on the surface of said object when said beam intersects said coating, and

when said radiation source and said object are pre-terminately positioned with respect to each other, generating information signals from a memory and applying said information signals to intensity modulate radiation from said source so as to variably energize the beam thereof and to variably generate radiation while said predetermined relative movement is effected between said beam and said object such that said radiant energy intersects and selectively records information along selected portions of said material coating said object to define a predetermined recording in said coating material.

14. A method in accordance with claim 13 wherein said object is a flat sheet-like record member and said material is coated on one side of said sheet-like record member and is intersected by said source of intense beam radiation during the recording operation.

15. Apparatus for coding objects by means of radiant energy comprising:

P<sub>1</sub> a source of radiant energy,

L means for effecting controlled relative movement between said radiant energy source and an object to be coded along a select area of said object whereby energy from said source may be caused to scan said select area,

P<sub>2</sub> a memory containing a plurality of information signal recordings,

P<sub>3</sub> means for detecting the presence of said object when it is within the scanning field of said source of radiant energy and generating a control signal, and

P<sub>4</sub> means for applying said control signal to control the selective reproduction of information from said memory to cause a plurality of control <sup>code</sup> signals to be reproduced therefrom,

P<sub>5</sub> means for applying said control code signals to control the generation of radiation from said source of intense radiant energy so as to cause said radiant energy to be generated as

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pulses representative of the selectively reproduced code, and  
P means for directing said pulses of radiant energy  
against said select area of said object at sufficient intensity  
to effect variations in the surface topography of the surface  
stratum of said object to define a recorded code formed in said  
surface stratum of said object.

15 A method of recording indicia in the form of  
alpha-numeric characters on a surface of an object comprising:

predeterminately relatively positioning a radiation  
beam generating means and an object to be recorded on by means  
of radiant energy generated by said generating means,

generating a recording cycle initiating control  
signal upon affecting said relative positioning,

applying said control signal to address a memory  
containing information defining alpha-numeric characters to  
be recorded on said object and reproducing such information  
from said memory as electrical control signals,

generating a beam of recording radiation and direct-  
ing said radiation beam from said radiation beam generating  
means to intersect a first portion of said object while  
applying first electrical control signals derived from said  
memory to control said radiation beam during a relative scanning  
movement thereof with respect to said object in a manner to  
effect recording of a first character on a first select portion  
of said object,

thereafter generating respective groups of character  
defining control signals derived from said memory in synchron-  
ization with the scanning relative movement between said radia-  
tion beam and said object and applying said respective groups  
of control signals to effect the recording of respective alpha-  
numeric characters on the surface of said object in a manner  
to define at least one line of alpha-numeric characters extend-  
ing across a band-like area of the surface of said object.

16 A method in accordance with claim 16 wherein the  
controlled relative movement between the beam generated by said  
radiation beam generating means and said object is effected by  
controllably deflecting said beam.

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~~18.~~<sup>9</sup> A method in accordance with claim 1 wherein the pulses of radiation ~~provided~~<sup>provide</sup> respective variations in the topography of the surface stratum of said object along space separated areas thereof which surface stratum variations define recordings which may be photo-electrically detected by varying the reflection of incident light directed against the surface of said object containing said variations in topography.

~~19.~~<sup>10</sup> A method in accordance with claim ~~18~~<sup>9</sup> wherein the pulses of radiant energy applied to said object are operable to form cavities in the surface stratum of said object which cavities define said recording of information.

~~20.~~ A method in accordance with claim 18 wherein said variations in the surface topography of said object are provided along a plurality of parallel recording tracks of said object.

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A method in accordance with claim 1 wherein said source of radiation is a laser and said relative movement between the beam generated by said laser and said object is effected by controllably conveying said object past said laser.

12. A method for providing a recording on an object comprising the steps of:

P<sub>1</sub> predeterminately locating an object and a source of intense radiant energy with respect to each other wherein said radiant energy is generated in the form of a pulsed radiant energy beam and whereby beam energy from said source may be caused to scan a selected area of the surface of said object,

P<sub>1</sub> identifying said object when it is at a scanning station, and

P<sub>1</sub> generating a control signal when such identification is made,

P<sub>1</sub> applying said control signal to selectively reproduce selected information signals defining a code from a memory containing a plurality of code signal recordings, so as to effect the generation of predetermined information defined by said code, and

P<sub>1</sub> utilizing said selected information signals while controlling the relative movement between said object and said source of intense radiant energy to pulse said beam of radiant energy so as to cause said beam to record a plurality of spot-like areas in the surface stratum of said object and to thereby effect a pulse code recording along the portion of the surface of the object intersected by said beam.

13. A method of recording information on objects comprising:

coating a material on a portion of the surface of an object on which portion a recording is to be effected,

relatively moving said object and a source of intense beam radiation capable of effecting a recording in said material